

# High Power Can Type UV LED

NSHU590

## Characteristics

- High Power Can Type UV LEDs
- 5° Narrow Directivity
- Half Angle ( $2\theta_{1/2}$ ) : 10°

## Applications

- Fluorescence Excitation
- Instruments

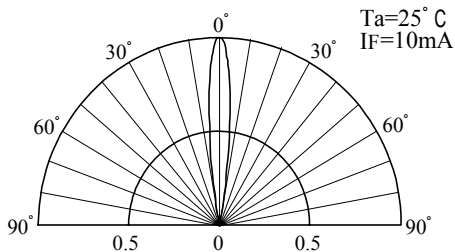
## Absolute Maximum Rating

(Ta = 25 °C)

Item	Symbol	Absolute Maximum Rating	Unit
DC Forward Current	IF	15	mA
Pulse Forward Current ※	IFP	30	mA
Allowable Reverse Current	IR	85	mA
Power Dissipation	PD	60	mW
Operating Temperature	Topr	-30 ~ +85	
Storage Temperature	Tstg	-40 ~ +100	

Pulse width Max.10ms Duty ratio Max.1/10

## Directivity



## Electrical• Optical Characteristics

(Ta = 25 °C)

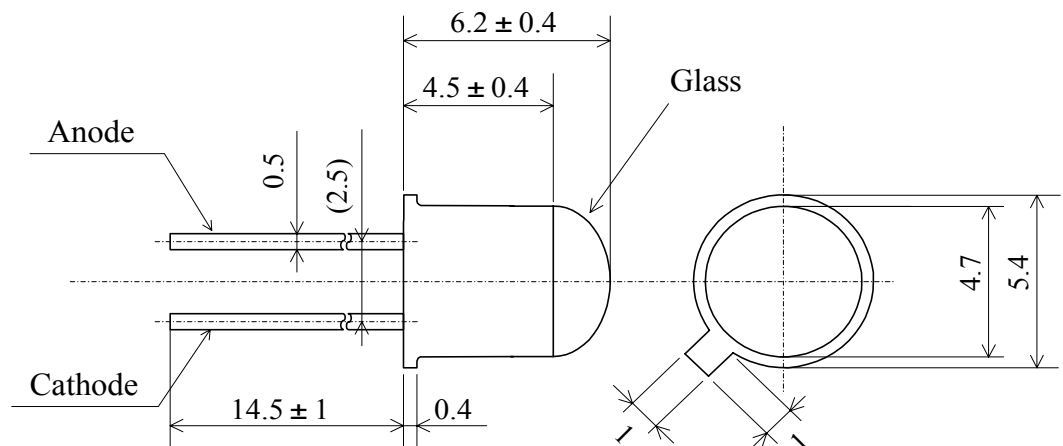
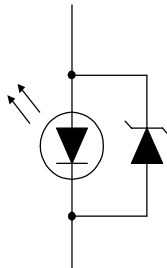
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	VF	IF=10mA	-	3.5	4.0	V
Optical Power Output	PO	IF=10mA	-	750	-	μW
Peak Wave Length	P	IF=10mA	-	375	-	nm
Spectrum Half Width		IF=10mA	-	12	-	nm

## Outline Dimension

Tolerance : ± 0.2

Unit : mm

Internal Circuit



## Caution



- The UV LED during operation radiates intense UV light.
- Do not look directly into the UV light during operation of device. This can be harmful to the eyes even for brief period due to the intense UV light.
- If viewing the UV light is necessary, please use UV filtered glasses to avoid damage by the UV light.
- If the UV LED in your product might be viewed directly, please affix a caution label to your product to that effect.
- Avoid direct eye exposure to UV light.
- Keep out of reach of children.

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STLD-AH0190A

&lt;Cat.No.000819&gt;

## NOTIFICATION

If you wish to purchase this product, please return a signed copy of this sheet.  
No products will be sold unless a signed copy of this sheet is returned.

## CAUTIONS

### (1) Lead Forming

- When forming leads, the leads should be bent at a point at least 3mm from the base of the lead.  
Do not use the base of the lead as a fulcrum during lead forming. Lead forming should be done before soldering.
- When mounting the LEDs onto a printed circuit board, the holes on the circuit board should be exactly aligned with the leads of the LEDs. If the LEDs are mounted with stress at the leads, it causes deterioration of the can and this will degrade the LEDs.

### (2) Soldering conditions

- Solder the LEDs no closer than 3mm from the base of the lead. Soldering the LEDs beyond the tie-bar is recommended.
- Maximum Allowable Soldering Conditions

Soldering	Solder Dipping
Soldering Iron : 30W Max.	Pre-Heat : 100 Max.
Temperature : 300 Max.	Pre-Heat Time : 60 seconds Max.
Soldering Time : 3 seconds Max.	Solder Bath Temperature : 260 Max.
Position : No closer than 3 mm from the base of the lead.	Dipping Time : 5 seconds Max.
	Dipping Position : No lower than 3 mm from the base of the lead.

- Do not apply any stress to the lead particularly when heated.
- When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.
- Cut the LED leads at room temperature. Cutting the leads at high temperature may cause failure of the LEDs.

### (3) Static Electricity

- Static electricity and surge will damage the LEDs. It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs. All devices, equipment and machinery must be properly grounded.
- When inspecting own final products on which LEDs were mounted, it is recommended to check also whether the mounted LEDs are damaged by static electricity or not. It is easy to find static-damaged LEDs by VF test at lower current.
- Damaged LEDs will show some unusual characteristics such as starting forward voltage becomes lower, or the LEDs get unlighted at the low current. Test method : (  $V_F > 2.5V$  at  $I_F = 0.5mA$  )

### (4) Heat Generation

- Heat generation must be taken into design consideration when using the LEDs. This temperature gets higher when the LEDs are densely mounted. It is necessary to design the circuit so that the operating conditions are within the absolute maximum ratings.
- The operating current should be decided after considering the ambient maximum temperature when the LEDs are illuminating.

### (5) Others

- The leads are plated with gold. Those will become discolored by contact with corroded gas etc.  
Precautions must be taken to maintain a clean storing atmosphere. Also, if the LEDs are stored for 3 months or more after being shipped from Nichia, a sealed container with a nitrogen atmosphere should be used for storage.
- The LED during operation radiates intense UV light. Do not look directly into the UV light during operation of device. This can be harmful to the eyes even for brief period due to the intense UV light.
- These LEDs described in this brochure are intended to be used for ordinary electronic equipment (such as office equipment, communications equipment, measurement instruments and household appliances). Consult Nichia's sales staff in advance for information on the applications in which exceptional quality and reliability are required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as for airplanes, aerospace, automobiles, traffic control equipment, life support systems and safety devices.)
- User shall not reverse engineer by disassembling or analysis of the LEDs without having the prior written consent of Nichia. When defective LEDs are found, User shall inform to Nichia directly before disassembling or analysis.
- The formal specifications must be exchanged and signed by both parties before large volume purchase begins.
- The appearance and specifications of the product may be modified for improvement without notice.

## SIGNATURE

I, the undersigned, understand the potentially hazardous nature of the light emitted by Nichia UV LEDs. Because of the hazardous nature of this product, I will follow the precautions as listed in this specification during use of these LEDs. Furthermore, I, the undersigned, will not hold Nichia responsible for any damage or injury due to the use, misuse or mishandling of the UV LEDs.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Company Name